



HARROW & HILLINGDON GEOLOGICAL SOCIETY

A Local Group of the Geologists' Association

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2024 Geo-futures

A series of talks showcasing advances in the research and practice of geology.

Wednesday 10th July 2024 at 8pm on Zoom

“All-inclusive catchment monitoring: A case study from the River Misbourne”

by Dr Ilias Karapanos (Affinity Water)

Abstract: The Cretaceous Chalk is a major aquifer and is considered the most important in the UK. Abstraction from the Chalk aquifer provides more than 50% of the groundwater used in Great Britain and in Affinity Water’s area, it provides up to 60% of the public water supply. Whilst meeting the demand of a rising population is the primary aim of every water supplier, there is a growing need to enhance our understanding of the flow processes within the Chalk aquifer and the groundwater-surface water interactions, with the aim to enhance the ecological conditions of the Chalk streams and meet the Water Framework Directive objectives.





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This presentation from Dr Ilias Karapanos will bring together the updated geological and hydrogeological conceptualisation of the Chalk aquifer in the Chilterns. The River Misbourne will be used as a case study, showcasing the monitoring that has been undertaken by Affinity Water and other organisations, aiming to enhance our conceptual understanding of groundwater and surface water flow processes. Understanding the relationship between river flows and groundwater abstraction at both a local and regional scale is key, whilst taking into account other pressures such as river morphology, water quality deterioration, changes in land use and climate change. The presenter proposes a holistic monitoring programme at a catchment level to help with effective decision making with regards to current and future environmental sustainability and water resources management.

Dr Ilias Karapanos is a Chartered Hydrogeologist who has managed 5 National Environment Programme projects and led numerous pumping tests and groundwater pollution investigations. One of his roles at Affinity Water is to provide advice and technical support for long term water resources planning including drought resilience and flood management of groundwater resources.